



**DEPARTMENT OF THE ARMY**  
**FORT WORTH DISTRICT, CORPS OF ENGINEERS**  
P. O. BOX 17300  
FORT WORTH, TEXAS 76102-0300

**REQUEST FOR STATEMENTS OF INTEREST**  
**NUMBER # W9126G-21-2-SOI-4931**  
**PROJECT TO BE INITIATED IN 2021**

**Unrestricted**

**Rev.1**

**Project Title:** Researching Methods to Improve Passage and Determine Impacts of Diversion and Flood Control Structures to Green Sturgeon for US Army Corps of Engineers (USACE), Sacramento District (SPK), in association with the National Marine Fisheries Service (NMFS)

Responses to this Request for Statements of Interest will be used to identify potential recipients/cooperators for a project to be funded by the USACE-Sacramento District. The purpose of this project will be to research how flood control projects impact green sturgeon with respect to entrainment, impediments to movement, and alteration of substrate, and identify demonstrable methods to ameliorate these impacts.

Approximately **\$1,000,000** is expected to be available to support the mandatory tasks during the **base period**.

**Background:**

The Sacramento District of the U.S. Army Corps of Engineers (hereafter 'Sacramento District' or 'USACE' or 'District') works with non-federal sponsors to ensure the levee system along the Sacramento Area Rivers, and their tributaries, provides adequate flood protection to the Sacramento metropolitan region. Currently, USACE is implementing flood risk management improvements under the American River Common Features (ARCF) Project. Federal environmental laws and regulations require the USACE to assess and evaluate the anticipated environmental impacts of planned federal actions, including levee improvement work under the ARCF Project. The National Marine Fisheries Service (NMFS) is responsible for ensuring protection of certain listed aquatic species in this watershed including work under the ARCF project.

### **Type of Award:**

The ARCF Project was authorized by Section 101 (a) (1) of the Water Resources Development Act (WRDA) of 1996 (PL 104-303); as modified by WRDA 1999, Section 366 (PL 106-53); Section 129 of the Energy and Water Development Appropriations Act, 2004 (Public Law 108-137); and Section 130 of the Energy and Water Development and Related Agencies Appropriations Act, 2008 (Division C of Public Law 110-161); and by Section 7002(2) of the Water Resources Reform and Development Act of 2014 (Public Law 113-121).

The ARCF GRR cost estimates supporting the 2016 Chief's Report accounted for mitigation and compensation for fish and wildlife as expenses which were necessary for the project to be deemed environmentally acceptable.

### **Brief Description of Anticipated Work:**

The project seeks to resolve unanswered questions about how green sturgeon interact with water diversion and flood control structures, and about the effects these structures have on the riverine environment. This work would further seek to demonstrate means and methods to ameliorate the identified effects, including testing current designs, and developing improved designs for NMFS fish entrainment protective screens. As the current protective screen criteria for water diversions has only been tested for juvenile salmonids, the effects to juvenile green sturgeon are insufficiently documented. If testing shows that current protective screen criteria are inadequate for green sturgeon, new, appropriate protective screen criteria will need to be developed. USACE also anticipates the testing of adult sturgeon upstream passage methods to increase passage above existing barriers. Studies of live fish are likely to provide more comprehensive data than models. Results would be shared in written publication, presentation, and conference format.

The objectives of the proposed effort include:

- **Objective 1:** Determine how green sturgeon interact with in-channel water intake structures with respect to deterrence, impediment, impingement, or entrainment. Testing effectiveness of current NMFS protective screens and measure the level of protection provided to juvenile green sturgeon.
- **Objective 2:** Develop, with NMFS, acceptable juvenile green sturgeon water intake screening criteria to minimize effects to this vulnerable population.
- **Objective 3:** Determine how live sturgeon interact with various types of passage structures in relation to volitional upstream passage. Determine minimization

strategies or structures that may reduce adverse impacts to green sturgeon from flood control activities and demonstrate the effectiveness of these strategies.

- **Objective 4:** Determine how river substrate characteristics affect green sturgeon behavior.

This work will require travel to Sacramento, California for meetings with USACE SPK and NMFS personnel.

**Period of Performance:**

The base period of agreement will extend 12 months from award. Four option periods extending for 12 months each are anticipated pending availability of funds.

**Materials Requested for Statement of Interest/Qualifications:**

Please provide the following via e-mail attachment to: [Sandra.Justman@usace.army.mil](mailto:Sandra.Justman@usace.army.mil) and [Gregory.W.Bonnell@usace.army.mil](mailto:Gregory.W.Bonnell@usace.army.mil) (Maximum length: 2 pages, single-spaced 12 pt. font).

1. Name, Organization, Cage Code, Duns number, and Contact Information
2. Brief Statement of Qualifications (including):
  - a. Biographical Sketch,
  - b. Relevant past projects and clients with brief descriptions of these projects,
  - c. Staff, faculty or students available to work on this project and their areas of expertise,
  - d. Any brief description of capabilities to successfully complete the project you may wish to add (e.g. equipment, laboratory facilities, greenhouse facilities, field facilities, etc.).

**Note:** A full study proposal and proposed budget are NOT requested at this time.

**Review of Statements Received:** All statements of interest received will be evaluated by a board comprised of one or more people at the receiving installation or activity, who will determine which statement(s) best meet the program objectives. Based on a review of the Statements of Interest received, an investigator or investigators will be invited to prepare a full study proposal. Statements will be evaluated based on the investigator's specific experience and capabilities in areas related to the study requirements.

**Please send responses or direct questions to:**

**Sandy K. Justman**

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**Timeline for Review of Statements of Interest:** The RSOI is required to be posted for at least 30 days prior to the Government making a decision and requesting full proposals. Responses due by 5:00 P.M., Central Time **11 AUGUST 2021**.

## **STATEMENT OF OBJECTIVES**

### **RESEARCHING METHODS TO IMPROVE PASSAGE AND DETERMINE IMPACTS OF DIVERSION AND FLOOD CONTROL STRUCTURES TO GREEN STURGEON FOR US ARMY CORPS OF ENGINEERS (USACE), SACRAMENTO DISTRICT (SPK), IN ASSOCIATION WITH THE NATIONAL MARINE FISHERIES SERVICE (NMFS)**

#### **1.0 PURPOSE**

This Statement of Objectives (SOO) provides the objectives of green sturgeon research to be performed for the US Army Corps of Engineers (USACE) Sacramento District (SPK) in support of the American River Common Features (ARCF) Project through a cooperative agreement (CA). The CA purpose is to investigate the impacts of flood control works and water diversion structures on the sDPS of green sturgeon, and to test and develop mitigation strategies in collaboration with USACE SPK. The Sacramento District intends to use all collected data to inform the design of levee improvements and potential mitigation strategies so that project work may be designed and tailored to meet applicable flood protection standards while minimizing adverse effects to protected aquatic habitats and providing adequate and appropriate mitigation for unavoidable impacts.

#### **2.0 AUTHORITY**

2.1 The ARCF Project was authorized by Section 101 (a) (1) of the Water Resources Development Act (WRDA) of 1996 (PL 104-303); as modified by WRDA 1999, Section 366 (PL 106-53); Section 129 of the Energy and Water Development Appropriations Act, 2004 (Public Law 108-137); and Section 130 of the Energy and Water Development and Related Agencies Appropriations Act, 2008 (Division C of Public Law 110-161); and by Section 7002(2) of the Water Resources Reform and Development Act of 2014 (Public Law 113-121).

2.2 The project was most recently authorized in Section 1401 (2) (7) of the Water Infrastructure Improvements for the Nation Act of 2016 (Public Law 114-322) to be completed substantially in accordance with the Chief's Report for the ARCF Project, signed by the Chief of Engineers in April of 2016.

2.3 Full funding for the project was provided as construction funds under the Long-Term Disaster Recovery Investment Plan, Bipartisan Budget Act of 2018 (Public Law 115-123). Amounts deemed for "Construction" include all necessary expenses to construct named projects which have signed Chief's Reports as of the date of the enactment.

2.4 The ARCF GRR cost estimates supporting the 2016 Chief's Report accounted for mitigation and compensation for fish and wildlife as expenses which were necessary for the project to be deemed environmentally acceptable.

2.5 Mitigation commitments for the ARCF project were defined in the National Marine Fisheries Service (NMFS) Biological Opinion (BO) dated May 2021 (Enclosure 1) including the issuance of this research grant as partial mitigation for impacts to green sturgeon.

2.6 In accordance with section 6305 – Using cooperative agreements of the Federal Grant and Cooperative Agreements Act of 1977 (31 U.S.C. § 6301 et seq.), substantial involvement is expected between the Department of Defense and the recipient when carrying out the activity contemplated by the cooperative agreement. The DoD agrees to participate at a national level in support of the CESU program as accepted in the Master MOU for the establishment and continuation of the CESU program Article II 1-4 and Article VI 1-7.

The Sacramento District further (hence DoD) agrees to provide substantial involvement as directed under Article II (A) California, Hawaii Pacific, North & West Alaska and/or Pacific Northwest CESU Master Agreements to include, but are not limited to, the following:

- SACRAMENTO DISTRICT is involved in development of study methodology, data gathering, analysis, and/or report writing
- SACRAMENTO DISTRICT coordinates with NMFS on study needs, direction, design, and timeline
- SACRAMENTO DISTRICT actively participates and collaborates in carrying out the project plan of work, reviews and approves activities, helps train or select project staff or trainees
- SACRAMENTO DISTRICT incurs in-kind or direct expenditures in carrying out the activities specified in the project agreement. Examples include, but are not limited to, the following:
  - Providing computing services
  - Providing staff time to work on the project
- SACRAMENTO DISTRICT participates in data presentation and reviews reports and final products

The Sacramento District of the Corps works with non-federal sponsors to ensure that the levee systems provide adequate flood protection to the Sacramento metropolitan region. The NMFS is responsible for protecting endangered aquatic species in this watershed. Green sturgeon is particularly enigmatic, and little is known about how human alterations to their habitat are impacting the species. Diet, habitat affinity, and response to man-made structures are yet little studied, even though the habitat of this prehistoric species has been greatly altered by man-made structures. The goal of the proposed cooperative agreement is to measure the effects of these man-made structures on green sturgeon with respect to migration, habitat use, and behavior, and to propose ways in which these adverse effects can be ameliorated. The results of this investigation will be made publicly available to further the state of the science on this understudied fish. Proposed minimization strategies will benefit water resources development projects led by other agencies by highlighting environmentally sustainable practices and standards. This project is additionally intended to offer students at the selected university an interdisciplinary understanding of the multiple dimensions of fisheries management and conservation, balancing biology, engineering, and human needs.

All results from the research will be available through both USACE and NMFS on request, and subsequently available through publication in report(s), journal article(s), or other document repositories (e.g. libraries).

### **3.0 BACKGROUND**

The Sacramento District works with non-federal sponsors to ensure the levee system along the Sacramento Area Rivers, and their tributaries, provides adequate flood protection to the Sacramento metropolitan region. Currently, USACE is implementing flood risk management improvements under the American River Common Features (ARCF) Project.

The ARCF Project area spans the Sacramento and American River Watersheds. The Sacramento River watershed covers approximately 26,000 square miles in central and northern California. Major tributaries of the Sacramento River include the Feather, Yuba, and American Rivers. The American River Watershed covers about 2,100 square miles northeast of the City of Sacramento and includes portions of Placer, El Dorado, Alpine, and Sacramento Counties. The American River watershed includes Folsom Dam and Reservoir; inflowing rivers and streams, including the North, South, and Middle forks of the American River; and the lower American River downstream of Folsom Dam to its confluence with the Sacramento River in the City of Sacramento. In the Sacramento metropolitan area, the Sacramento and American Rivers form a flood plain covering roughly 110,000 acres.

Federal environmental laws and regulations require the USACE to assess and evaluate the anticipated environmental impacts of planned federal actions, including levee improvement work under the ARCF Project. The National Marine Fisheries Service (NMFS) is responsible for ensuring protection of certain listed aquatic species in this watershed. The southern distinct population segment (called sDPS) of the green sturgeon (*Acipenser medirostris*) may be adversely impacted by construction and operation of flood control and water diversion structures within the scope of the ARCF Project, however significant data gaps exist. Accordingly, per consultation agreements with NMFS, to benefit the species and as mitigation for adverse impacts from the ARCF Project USACE will award funding to a qualified agency or academic institution by grant to conduct a study that leads to a better understanding of juvenile green sturgeon behavior in proximity to unscreened diversions, analyze how river substrate characteristics effect green sturgeon behavior, and develop adult green sturgeon passage requirements that apply to conditions the species encounters in the Sacramento River mainstem and Central Valley, including the Sacramento-San Joaquin Delta.

Currently, the District's green sturgeon habitat management and monitoring plan (HMMP) team currently utilizes a habitat surrogacy assessment to measure adverse effects on the green sturgeon sDPS caused by the District's flood control works. One goal of the HMMP is to utilize and apply best available scientific expertise and information to ensure that anticipated adverse impacts from all future USACE flood control projects, specifically including the ARCF Project, on sDPS green sturgeon are fully mitigated in order to maintain the growth, survival and recovery of the species in the Project area. The HMMP

needs to fill important data gaps on green sturgeon life history and micro and macro habitat ecology in both the Sacramento River and the north Delta within the project impact area, in regard to how bank stabilization measures proposed in the ARCF GRR affect sturgeon ecology and survival, particularly in regard to juvenile rearing and survival.

The Funding Opportunity announced here is a solicitation to interested university members of eligible Cooperative Ecosystem Studies Units (CESU) to compete for a funding grant to investigate the impacts of flood control works and water diversion structures on the sDPS of green sturgeon, and to test and develop mitigation strategies under direction of the Sacramento District and as advised by NMFS. The Sacramento District intends to use all collected data to inform the design of levee improvements and potential mitigation strategies so that project work may be designed and tailored to meet applicable flood protection standards while minimizing adverse effects to protected aquatic habitats and providing adequate and appropriate mitigation for unavoidable impacts.

Flood control works, including levee revetment, water diversion structures, and impediments to fish passage, are suspected of adversely impacting green sturgeon in the following ways:

- Juvenile green sturgeon may be subjected to noise, physical disturbance, and water quality changes that may cause injury or harm by increasing the susceptibility of some individuals to predation by temporarily disrupting normal behaviors and affecting sheltering abilities.
- Loss of overhead cover and refuge for juvenile sturgeon may increase predation.
- Rock revetments may increase velocities along channel margins preferred by juvenile sturgeon.
- Loss of soft substrates may reduce food resources available to juvenile and adult green sturgeon.
- Water diversion structures may entrain juvenile sturgeon where screening criteria are only directed at salmonids and may not protect juvenile sturgeon.
- In-channel man-made structures (weirs, dams, intakes) may pose impediments which inhibit the passage of adults and preclude them from spawning.

Data gaps and research objectives outlined in the most recent NMFS recovery plan include:

- Identification of current and proposed water diversions posing significant risk to green sturgeon
- Conducting research to evaluate sDPS spawning substrate suitability in the Sacramento, Feather, and Yuba rivers.



- Developing effective structures to enable upstream volitional passage of migrating adult sturgeon.

#### **4.0 DESCRIPTION OF OBJECTIVES**

The proposed agreement seeks to resolve unanswered questions about how green sturgeon interact with water diversion and flood control structures, about the effects these structures have on the riverine environment, and how river substrate characteristics affect green sturgeon behavior. The agreement would further seek to demonstrate means and methods to ameliorate the identified effects, including testing current designs, and developing improved designs for NMFS fish entrainment protective screens. As the current protective screen criteria for water diversions has only been tested for juvenile salmonids, the effects to juvenile green sturgeon are insufficiently documented. If testing shows that current protective screen criteria are inadequate for green sturgeon, new, appropriate protective screen criteria will need to be developed. USACE also anticipates the testing of adult sturgeon upstream passage methods to increase passage above existing barriers. Studies of live fish are likely to provide more comprehensive data than models. Results would be shared in written publication, presentation, and conference format. Additional data standards are in Attachment 1.

The objectives of the proposed effort include:

- **Objective 1:** Determine how green sturgeon interact with in-channel water intake structures with respect to deterrence, impediment, impingement, or entrainment. Testing effectiveness of current NMFS protective screens and measure the level of protection provided to juvenile green sturgeon.
- **Objective 2:** Develop, with NMFS, acceptable juvenile green sturgeon water intake screening criteria to minimize effects to this vulnerable population.
- **Objective 3:** Determine how live sturgeon interact with various types of passage structures in relation to volitional upstream passage. Determine minimization strategies or structures that may reduce adverse impacts to green sturgeon from flood control activities and demonstrate the effectiveness of these strategies.
- **Objective 4:** Determine how river substrate characteristics affect green sturgeon behavior.

#### **Tasks:**

##### **Task 1 Kickoff Meeting:**

The Principal Investigator (PI) shall conduct a Kick-off Meeting with the USACE within ten (10) business days of grant award. This meeting shall be an informal discussion between the PI and USACE. At this meeting the PI will introduce the project team and define the project chain of command. The USACE will communicate to the PI the reporting tasks as outlined. The Kick-off

Meeting shall provide the opportunity for the PI and USACE to coordinate the project's tasks that outlined below.

Within ten (10) days following the Kick-off Meeting, the PI shall submit an electronic summary (Draft Work Plan) of the meeting. The Project Manager (PM) will respond with comments to the PI within ten (10) business days after the receipt by the USACE of the Draft Work Plan. The PI shall address comments and submit a Final Work Plan, which will be submitted to the USACE ten (10) days of its receipt by the PI. Upon its approval in writing by the USACE's PM, the Final Work Plan shall become the working document for this work order. The PI shall proceed with the performance of the work order in accordance with the approved Final Work Plan and the requirements of this CA. In the event of any conflict between this CA and the Final Work Plan, the Final Work Plan shall take precedence. The Final Work Plan will be updated as necessary at the beginning of each new Option Year.

**Task 2 Participation in Green Sturgeon Habitat Mitigation and Monitoring Interagency Team Support:**

The PI shall be required to work with the Green Sturgeon Habitat Mitigation and Monitoring Interagency Team to assist in the development of mitigation and monitoring strategies. The PI will also provide a presentation to the Interagency Team or other science meetings as directed by the USACE PM during the course of the contract. This presentation shall include an MS PowerPoint presentation that summarizes all work that has been done including data analysis and interpretations that highlight all spatial and statistical relationships found. Finally, the PI shall list recommendations for further data analysis and/or collection.

The PI shall provide up to twelve (12) days to work with the Green Sturgeon Habitat Mitigation and Monitoring Interagency Team to assist in the development of mitigation and monitoring strategies as applicable. The majority of information provided will be drawn from the Annual Technical Report submitted for Task 3.

The PI will attend an Interagency Team or other science meeting after the conclusion of study executed under this proposed CA. A presentation of the project will be made. The PI shall provide the USACE an electronic copy of the MS PowerPoint presentation made at the scheduled Interagency Team meeting. If electronic files are too large to submit via email, the PI may choose to transfer such files through an FTP site or to provide it on a compact disc.

The PI shall attend and participate in Green Sturgeon Habitat Mitigation and Monitoring Interagency Team meetings (approximately twelve [12] in each fiscal year).

**Task 3 Findings Presentation:**

Similar to the presentation delivered under Task 2, the PI shall provide a presentation that summarizes all work that has been done and the major findings of the work annually to the larger USACE team. This audience may consist of engineers, project managers, representatives from non-federal partner agencies, and others without a life sciences background. The PI shall provide the USACE an electronic copy of the MS PowerPoint presentation made at the scheduled

Interagency Team meeting. If electronic files are too large to submit via email, the PI may choose to transfer such files through an FTP site or to provide it on a compact disc.

**Task 4 Technical Paper:**

The PI shall prepare a summary report of data, analysis, and conclusions related to each study objective for each funded period of performance and final synoptic report at the conclusion of this study. These reports will be disseminated by USACE for public education and potential academic use.

**5.0 GOVERNMENT FURNISHED MATERIALS OR PROPERTY**

5.1 Physical Data:

SPK shall provide access to any necessary data, existing reports, recent studies, and any other information necessary to complete the objectives of this scope.

5.2 Equipment:

Government-furnished materials or property is governed by 2 C.F.R. Part 200.312 which states that a) Title to federally owned property remains vested in the Federal government. The non-Federal entity must submit annually an inventory listing of federally owned property in its custody to the Federal awarding agency. Upon completion of the Federal award or when the property is no longer needed, the non-Federal entity must return the property to the Federal awarding agency for further Federal agency utilization.

**6.0 PERIOD OF PERFORMANCE**

The base period of agreement will extend 12 months from award. Four option periods extending for 12 months are anticipated pending availability of funds.

**7.0 COORDINATION**

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## **8.0 DELIVERABLES**

**Table 1. Deliverables Schedule**

Deliverable	Schedule	Distribution
<b>Bi-weekly Teleconference Progress and Coordination meetings:</b> The PI shall meet with the USACE SPK POC to cover progress and challenges	Bi-weekly	To USACE SPK Project Technical POC
<b>Green Sturgeon Habitat Mitigation and Monitoring Interagency Team Meetings:</b> The PI shall meet with the interagency team	Monthly	To USACE SPK Project Technical POC
<b>Technical Presentation:</b> Prepare and submit an annual Technical Presentation	Deliver annually prior to 1 <sup>st</sup> Monday of November of each year	Submit both electronic and hard copies to the USACE SPK Project Technical POC.
<b>Non-Technical Presentation:</b> Prepare and submit an annual non-technical presentation	Deliver annually prior to 1 <sup>st</sup> Monday of November of each year	Submit both electronic and hard copies to the USACE SPK Project Technical POC.
<b>Annual Reports:</b> Prepare and submit an Annual Technical Status Report and Business Status Report	Annual reports are to be delivered on the 1 <sup>st</sup> Monday of November of each year.	Submit both electronic and hard copies to the USACE SPK Project Technical POC. Submit electronic version only to USACE PM and GOTR.
<b>Final Report:</b> Prepare and submit final report with all comments addressed.	Due 30 days prior to the end of the period of performance.	Submit both electronic and hard copies to the USACE SPK Project Technical POC. Submit electronic version only to USACE PM and GOTR.

### **A. ANNUAL REPORT**

Throughout the term of the Agreement, the Recipient shall submit an annual report. Prior to the submission of the annual report, a review of the proposed report will be conducted by the USACE SPK Technical POC. One (1) copy shall be submitted or otherwise provided to the Grants Officer and one (1) copy to the USACE SPK Technical POC. The report shall contain two (2) major sections:

1. **Technical Status Report.** The technical status report will detail technical progress to date on research milestones, all problems, technical issues or major developments during the reporting period. The technical status report will include a report on the status of the collaborative activities during the reporting period.
2. **Business Status Report.** The business status report will provide summarized details of the resource status of this Agreement. This report should compare the resource payment, expenditures, and status with the current Research Budget Plan. Cost and labor hours or percentage effort for universities should be shown by task in a cumulative total per year.

Any major deviations shall be explained along with discussion of adjustment actions proposed.

## **B. JOURNAL ARTICLES**

Journal articles are strongly encouraged as a major reporting mechanism of this research effort.

## **C. FINAL REPORT**

1. The Recipient shall submit a Final Report making full disclosure of all major technical developments by the Recipient within ninety (90) calendar days of completion or termination of this Agreement. The Final Report shall contain a final accounting of all Federal funds expended during the term of the Agreement. With the approval of the Grants Officer, reprints of published articles may be attached to the Final Report.
2. The Recipient shall make distribution of the Final report as follows: USACE SPK Technical POC- 1 original plus 1 copy; Agreement Administration Office - 1 copy, and the Grants Officer - 1 copy.

The Final Report shall be marked with a distribution statement to denote the extent of its availability for further distribution, release, and disclosure with additional approvals or authorizations.

8.1 Progress Updates - Invoices for partial payment shall be submitted to coincide with receipt of the annual reports. No partial payment will be approved unless the government has received and accepted the annual reports.

8.2 Annual Inventory – Federally owned property - an annual inventory listing Federal property (to include description of the property, a serial number or other identification number) that is in the custody of the recipient; Copies to be sent to USACE – SWF, GOTR and SPK POC.

8.3 Annual Inventory – Acquired Property purchased with funding from award - property records must be maintained that includes description of the property, serial number or other identification number, source of funding, who holds title, acquisition date, cost of property, percentage of Federal participation in project costs, location, use and condition of property, and ultimate disposition including date of disposal and sale price. A physical inventory must be taken, and results reconciled every two years. Copies of the inventory to be sent annually to USACE – SWF, USACE GOTR and SPK POC.

## **9.0 ADMINISTRATION**

9.1 Any resulting cooperative agreement will be subject to and recipient/cooperator shall comply with 2 CFR 200.313 “Equipment”, 200.314 “Supplies”, and 200.315 “Intangible Property” which includes use of research data.

[End of SOO]

**ATTACHMENT 1**

## **DATA STANDARDS**

### **A. PUBLIC AVAILABILITY**

Technical and geospatial data and information collected or created under this cooperative agreement must be made discoverable by and accessible to the general public, in a timely fashion (typically within two years), free of charge or at no more than the cost of reproduction, unless an exemption is granted by the USACE grants administration program. Data should be available in at least one machine-readable format, preferably a widely used or open-standard format, and should also be accompanied by machine-readable documentation (metadata), preferably based on widely used or international standards.

### **B. DATA MANAGEMENT PLAN**

Proposals submitted in response to this Announcement must include a Data Management Plan of up to two pages describing how these requirements will be satisfied. The contents of the Data Management Plan (or absence thereof), and past performance regarding such plans, will be considered as part of proposal review. A typical plan should include descriptions of the types of data and information expected to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; methods for providing data access; approximate total volume of data to be collected; and prior experience in making such data accessible. The costs of data preparation, accessibility, or archiving may be included in the proposal budget.

### **C. PUBLIC DISCLOSURE**

USACE may, at its own discretion, make publicly visible the Data Management Plan from funded proposals, or use information from the Data Management Plan to produce a formal metadata record and include that metadata in a Catalog to indicate the pending availability of new data.

### **D. MANUSCRIPT PUBLICATION**

Proposal submitters are hereby advised that the final pre-publication manuscripts of scholarly articles produced entirely or primarily with USACE funding will be required to be submitted to USACE after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available by USACE one year after publication by the journal.

[End of SOO]